

# METHOD AND APPARATUS FOR OPERATING A TRANSCEIVER IN DIFFERENT DATA RATES

## ABSTRACT

A transceiver can be used to send and receive data at a lower data rate than the data rate its SERDES is designed to operate. It contains a transmitter interface that receives a first set of data at a lower data rate and delivers a second set of data to the SERDES at a higher data rate. The transceiver also contains a receiver interface that receives a third set of data from the SERDES at the higher data rate and delivers a fourth set of data at the lower data rate. To reduce the minimum transmission serial data rate, one embodiment of the present invention derives a half-speed clock for the transmitter interface. Using the half-speed clock, the transmitter interface supplies data to be transmitted at half the normal rate with respect to a reference clock. As a result, the data rate is reduced. The opposite operation is used for the receiver interface.